

Systematic Status of *Carangoides malabaricus* (Schneider, 1801) and *Carangoides caeruleo-pinnatus* (Rüppell, 1828) [Pisces : Carangidae]

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INTRODUCTION

Considerable confusion exists about the status and identity of *Caranx malabaricus* Schneider, 1801, originally described from Tranquebar (south-east coast of India) and *Caranx caeruleo-pinnatus* Rüppell, 1828, from the Red Sea. The original descriptions of both species are inadequate and the type material lost (*vide* Williams 1958).

Rüppell's (1835) figure of *Caranx caeruleo-pinnatus* shows the breast naked (without scales) up to the end of the pelvic fin ray.

Günther (1860) while describing *Caranx malabaricus* Schneider considered *Caranx caeruleo-pinnatus* Rüppell, 1828, as a synonym of the species, an opinion accepted by Klunzinger (1871), Day (1876), Weber & de Beaufort (1931) and Williams (1958).

Day (1876) described *Caranx malabaricus* Schn. and figured an 8 inch specimen from Madras which was considered by Klunzinger (1884) as a synonym of his new species *Caranx impudicus*, since the naked area of the breast extended up to the anal fin and the curve of the lateral line joined the straight section before the middle of the anal fin. Weber (1913) considered both these characters of dubious and insignificant taxonomic importance.

Fowler (1925 and 1934) distinguished *Carangoides malabaricus* (Schn.) from *Carangoides caeruleo-pinnatus* (Rüpp.) on the gill raker number. Later, Fowler (1927) collected five specimens from Bombay which, according to him, agree with Day's (1876) figure of *Caranx malabaricus* (Schn.)

Weber & de Beaufort (1931) while describing *Carangoides malabaricus* (Schn.) queried the validity of *Caranx malabaricus* of Day (1876) and *Caranx impudicus* of Klunzinger (1884).

In a recent review on 'Fishes of the family Carangidae in East African waters', Williams (1958) treated *Caranx caeruleo-pinnatus*

Rüppell as a junior synonym of *Carangoides malabaricus* (Schn.), and described a closely allied new species, *Carangoides rectipinnus*, based on a single example from Zanzibar. He considered *Caranx malabaricus* of Day (1876) and Fowler (1925 and 1934), and *Caranx impudicus* of Klunzinger (1884) as probable synonyms of his new species.

From a careful examination of twenty-eight specimens [including Day's (1876) figured specimen and topotypes] available in the collections of the Zoological Survey of India, it has been possible to conclude that: (1) *Carangoides caeruleo-pinnatus* (Rüppell, 1828) is distinct from *Carangoides malabaricus* (Schneider, 1801); (2) *Caranx impudicus* Klunzinger, 1884 and *Carangoides rectipinnus* Williams, 1958 are junior synonyms of *Carangoides malabaricus* (Schneider, 1801).

In this paper the synonyms, distinguishing characters, detailed description and distribution of *Carangoides malabaricus* (Schneider) is given based on the material and literature studied. The synonyms, distinguishing characters and distribution, based on literature, of *Carangoides caeruleo-pinnatus* (Rüppell) is also given. The morphometric measurements were made in accordance with the method described by Williams (1958).

NOTES ON THE SPECIES

Carangoides malabaricus (Schneider), 1801

- Scomber malabaricus* Schneider, 1801, p. 31 (Tranquebar, India).
Caranx malabaricus Cuvier and Valenciennes, 1833, p. 121; Bleeker, 1845, p. 517;
 Cantor, 1850, p. 1110; Günther, 1860, p. 436; Day, 1876, p. 221, pl. 50, fig. 2;
 Weber, 1913, p. 394; Wakiya, 1924, p. 178, pl. 23, fig. 3; Weber and de Beaufort,
 1931, p. 237; Blegvad, 1944, p. 98; Smith, 1953, p. 217; Menon, 1961, p. 388.
Carangoides talamparah Bleeker, 1852, p. 64 (East Indies).
Carangoides talamparoides Bleeker, 1852, p. 91 (East Indies).
Caranx talamparoides Günther, 1860, p. 437.
Caranx impudicus Klunzinger, 1884, p. 99 (Red Sea).
Caranx caeruleo-pinnatus Wakiya, 1924, p. 179, pl. 25, fig. 1.
Carangoides malabaricus Fowler, 1925, p. 212; 1927, p. 774; 1934, p. 447; Munro,
 1955, p. 127.
Citula malabaricus Misra, 1959, p. 238.
Carangoides rectipinnus Williams, 1958, p. 401, pl. 10, fig. 13 (Zanzibar).

MATERIAL EXAMINED (28 specimens):

No. 254.	1158 mm, Madras, c. 1876, F. Day; Original of pl. 50, fig. 2.
No. 1011.	1139 mm, Madras, c. 1876, F. Day.
No. 8731.	176 mm, Burma, c. 1876, F. Day.
No. 8723.	157 mm, Burma, c. 1876, F. Day.
?	166 mm, Burma, c. 1876, F. Day.
No. 10332.	1206 mm
No. 10333.	1216 mm
No. 10334.	1234 mm
No. 10335.	1189 mm

} Bushire, c. 1870, W. T. Blanford.
(Persian Gulf).

No. 12271.	1156 mm, Orissa, 11/1/1889, 'Investigator'.
No. 14041.	192 mm, Bengal, ? , C. Woolward.
No. F. 4921/2.	467-139 mm, Andhra, 23/1/1929, H. S. Rao.
No. F. 4858/2.	1111 mm, Goa, c. 1938, ?
No. F. 1760/2.	260-64 mm, Karwar (Mysore), 20/2/1956, K. K. Tiwari.
No. F. 607/2.	1122 mm, Bay of Bengal, 1957, 'Bengal Fisheries'.
No. F. 1120/2.	2131-137 mm, Tranquebar, 6/2/1957, A. G. K. Menon.
No. F. 1127/2.	2113-141 mm, Pondicherry, 22/12/1959, A. G. K. Menon.
?	454-147 mm, ? ? ?
—	184 mm, Madras, 5/11/1966, T. Sivaprakasam.

Distinguishing characters of the species :

Carangoides with breast naked (without scales) extending up to the anal fin ; scutes on lateral line less than 30 ; 23-26 gill rakers on lower arm of first arch.

Description :

D VIII+1·21-23 (in Day's original of pl. 50, fig. 2, the 12th ray not developed).

A II+1·17-18 ; P I. 20-21.

Scutes on lateral line straight, 23-25, weak.

Gill rakers on first arch 8-10 + 1 + 23-26, lanceolate.

Depth of body 2·0-2·2 (1·6-2·0 in juveniles) ; length of head 2·8-3·1 ; both in standard length. Eye diameter 2·7-3·4 (2·3-2·9 in juveniles) ; length of snout 2·6-3·3 ; interorbital width 3·5-4·1 ; suborbital width 6·0-7·1 ; postorbital length 2·5-3·2 ; maxillary length 2·2-2·7 ; pectoral fin length 0·6-1·0 ; pelvic fin length 2·2-3·0 ; 3rd dorsal spine length 2·2-2·9 ; 1st dorsal ray 1·6-2·2 ; 1st anal ray 1·7-2·3 ; all in length of head. Eye diameter in snout length 0·8-1·3. Lateral curve in lateral line straight 0·6-0·8.

Body strongly compressed, ovate in young, becoming subovate in large adults ; caudal peduncle slightly wider than high. Nape elevated, becoming depressed with age. Head higher than long in young, about as high as long in adults. Cleft of mouth below level of eye, oblique. Jaws highly protrusible, lower jaw the longer. Maxilla reaches front edge of pupil. Operculum entire. Lateral line anteriorly with a long shallow arch, joins lateral line straight under 12th-13th dorsal ray, but the joint never very distinct.

Teeth : Villiform, in bands in both jaws ; a band of minute teeth on tongue, vomer and palatines.

Scales : On body small ; breast naked ventrally and laterally in a triangular area from spine of anal fin to beyond pectoral fin base. A few scales on cheeks and postorbital area, rest of head naked.

Fins : Third dorsal spine longest, second and fourth nearly as long. Soft dorsal and anal fins only very slightly elevated anteriorly ; basal sheath to both fins. Pectorals falcate ; pelvics short. Caudal widely forked, lobes equal.

Distribution: East coast of Africa, Zanzibar, Red Sea, Persian Gulf to India, Ceylon, Burma, the East Indies, Philippines and Japan.

***Carangoides caeruleo-pinnatus* (Rüppell), 1828.**

Caranx caeruleo-pinnatus Rüppell, 1828, p. 100; 1835, p. 47, pl. 13, fig. 2.

Caranx malabaricus Klunzinger (*nec.* Schneider), 1871, p. 463; 1884, p. 99.

Carangoides caeruleo-pinnatus Fowler, 1934, p. 448.

Carangoides malabaricus Williams, 1958, p. 402, pl. 11 & 12.

Distinguishing characters of the species:

This species is very close to *Carangoides malabaricus* (Schneider) but is distinguished from it in having 14-18 lower gill rakers (*versus* 23-26). Further, the breast is naked up to the inner pelvic ray, when depressed, only.

Distribution: Red Sea and the east coast of Africa.

REMARKS

As stated earlier, the 28 specimens studied from the Persian Gulf, India and Burma (including Day's figured specimen and topotypes) have 23-26 gill rakers in the lower arm, and the breast is naked up to the end of the pelvic fin ray, when depressed. Since no specimen of *Carangoides malabaricus* with a lower gill raker count, namely 13-19 and the breast naked up to the anal fin, has so far been reported from Indian waters, Schneider's (1801) type of *Caranx malabaricus* was probably a specimen with a higher gill raker number and the breast naked up to the end of the pelvic ray, when depressed.

Williams (1958) obtained both species of *Carangoides* from East Africa but due to the confusion of the nomenclature, in the literature, he assigned different names to the two species. Williams (*l.c.*) apparently overlooked Fowler's (1934) description of *Carangoides caeruleo-pinnatus* since he makes no mention of it. His descriptions of *Carangoides malabaricus* (Schneider) and *Carangoides rectipinnus* Williams agree so well with Fowler's (1934) descriptions of *Carangoides caeruleo-pinnatus* (Rüppell) and *Carangoides malabaricus* (Schneider) respectively, that his failure to use the name *caeruleo-pinnatus* is not clear.

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